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### ETURBEV GD20-1R5G-4

# ETURBEV GD20 Series VFD Inverter Instruction Manual

Models: GD20-0R7G-4, GD20-1R5G-4, GD20-2R2G-4

## 1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the ETURBEV GD20 Series Variable Frequency Drive (VFD) Inverter. The GD20 series is designed for open-loop vector control applications, offering reliable performance for various motor control needs. Please read this manual thoroughly before attempting to install or operate the device.

## 2. Safety Information

**Warning:** Improper installation or operation can lead to serious injury or death. Only qualified personnel should install, operate, or maintain this equipment.

- Always disconnect power before performing any wiring or maintenance.
- Ensure proper grounding of the inverter and motor.
- Do not touch electrical components immediately after power-off, as residual voltage may be present. Wait at least 5 minutes for capacitors to discharge.
- Protect the inverter from moisture, dust, and corrosive gases.
- Verify all wiring connections are correct and secure before applying power.

## 3. Product Overview

The ETURBEV GD20 Series VFD Inverter is a compact and efficient device for controlling the speed and torque of AC induction motors. It features an integrated control panel for easy parameter setting and monitoring.




Figure 3.1: Front view of the ETURBEV GD20 Series VFD Inverter, showing the control panel with display, buttons, and rotary knob.






Figure 3.2: Close-up view of the GD20 Series VFD Inverter control panel, highlighting the digital display, 'RUN' and 'STOP/RST' buttons, navigation keys, and 'PRG/ESC', 'DATA/ENT', 'QUICK JOG', and 'SHIFT' buttons.

The series includes models with different power ratings, such as GD20-0R7G-4, GD20-1R5G-4, and GD20-2R2G-4, designed to meet various industrial requirements.




Figure 3.3: Two ETURBEV GD20 Series VFD Inverters, illustrating potential size variations within the series.

## 4. Specifications

The following table outlines the general specifications for the ETURBEV GD20-1R5G-4 model. Specific parameters may vary slightly between models in the GD20 series.

| Feature | Specification |
|---|---|
| Model Number | GD20-1R5G-4 |
| Product Dimensions | 1.18 x 0.79 x 0.79 inches |
| Item Weight | 1.76 ounces |
| Control Method | Open Loop Vector Control |
| Input Voltage | Refer to product label for specific voltage range (typically 3-phase 380-480V) |
| Output Frequency Range | 0-400 Hz (typical) |
| Manufacturer | ETURBEV |

# 5. Setup and Installation

## 5.1 Mounting

Mount the VFD vertically on a flat, non-flammable surface in an environment free from excessive vibration, dust, moisture, and direct sunlight. Ensure adequate clearance around the unit for proper ventilation and heat dissipation. Maintain a minimum of 10 cm (4 inches) clearance above and below the unit, and 5 cm (2 inches) on the sides.

## 5.2 Wiring

All wiring must comply with local and national electrical codes. Use appropriate wire gauges for power and control circuits.

- **Power Input (R, S, T):** Connect the main AC power supply to the input terminals. Ensure correct phase sequence.
- **Motor Output (U, V, W):** Connect the motor leads to the output terminals. Do not connect the motor's ground wire to these terminals.
- **Grounding (PE):** Connect the VFD's ground terminal to a reliable earth ground. The motor frame must also be properly grounded.
- **Control Terminals:** Connect external control signals (e.g., start/stop, speed reference, fault reset) to the designated control terminals as per your application requirements. Refer to the detailed wiring diagram provided with the product packaging for specific terminal assignments.




Figure 5.1: Rear view of two ETURBEV GD20 Series VFD Inverters, illustrating the location of power input, motor output, and control wiring terminals.

### 5.3 Initial Power-Up

Before applying power, double-check all wiring connections. Apply power to the VFD. The display should illuminate. If an error code appears, refer to the troubleshooting section.

## 6. Operating Instructions

### 6.1 Control Panel Functions

- **Display:** Shows operating status, frequency, current, voltage, and error codes.

- **RUN Button (Green):** Initiates motor operation.
- **STOP/RST Button (Red):** Stops motor operation or resets fault conditions.
- **PRG/ESC Button:** Enters/exits parameter setting mode or cancels current operation.
- **DATA/ENT Button:** Confirms parameter settings or enters sub-menus.
- **Up/Down Arrows:** Navigate through menus or adjust parameter values.
- **SHIFT Button:** Moves the cursor during parameter editing or changes display units.
- **QUICK JOG Button:** Provides a momentary jog function for the motor.

### 6.2 Basic Operation

1. **Power On:** Ensure the VFD is powered on and the display is active.
2. **Set Frequency:** Use the Up/Down arrow buttons to adjust the desired output frequency (motor speed).
3. **Start Motor:** Press the **RUN** button. The motor should start accelerating to the set frequency.
4. **Stop Motor:** Press the **STOP/RST** button. The motor will decelerate and stop.

### 6.3 Parameter Settings

The GD20 series VFDs have numerous parameters for fine-tuning performance. To access and modify parameters:

1. Press the **PRG/ESC** button to enter parameter setting mode.
2. Use the Up/Down arrows to navigate through parameter groups and individual parameters.
3. Press **DATA/ENT** to select a parameter or enter a sub-menu.
4. Use Up/Down arrows to change the parameter value. Use **SHIFT** to move the cursor for digit-by-digit editing.
5. Press **DATA/ENT** to save the new value.
6. Press **PRG/ESC** to exit parameter setting mode.

*Note:* A comprehensive list of parameters and their functions is available in the full product manual. Incorrect parameter settings can damage the VFD or motor.

## 7. Maintenance

Regular maintenance ensures the longevity and reliable operation of your VFD.

- **Cleaning:** Periodically clean the VFD's exterior and cooling fins to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly inspect wiring connections for looseness or signs of damage. Check for any unusual noises or odors during operation.
- **Environmental Conditions:** Ensure the operating environment remains within specified temperature and humidity ranges.
- **Fan Replacement:** Cooling fans have a finite lifespan. Consider replacing them every 3-5 years, or sooner if noise increases significantly.

## 8. Troubleshooting

If the VFD encounters an issue, it may display an error code. Refer to the full product manual for a complete list of error codes and their solutions. Below are some common issues and general troubleshooting steps:

| Problem/Error Code | Possible Cause | Solution |
|---|---|---|
| No Display/No Power | No input power; Blown fuse; Wiring error | Check power supply; Inspect fuses; Verify input wiring. |

| Problem/Error Code | Possible Cause | Solution |
|---|---|---|
| Overcurrent (OC) Fault | Motor overload; Short circuit in motor wiring; Rapid acceleration/deceleration | Check motor load; Inspect motor wiring; Increase acceleration/deceleration times. |
| Overvoltage (OV) Fault | High input voltage; Rapid deceleration with high inertia load | Check input voltage; Increase deceleration time; Consider braking resistor if applicable. |
| Undervoltage (UV) Fault | Low input voltage; Power dip | Check input voltage; Ensure stable power supply. |
| Overheat (OH) Fault | Ambient temperature too high; Blocked cooling fan/vents; VFD overload | Improve ventilation; Clean cooling fins; Reduce load or check VFD sizing. |

If the problem persists after attempting these solutions, contact technical support.

## 9. Warranty and Support

For detailed warranty information, please refer to the warranty card included with your product or visit the official ETURBEV website. If you require technical assistance, have questions about installation, operation, or troubleshooting, please contact ETURBEV customer support through their official channels. Ensure you have your product model number (e.g., GD20-1R5G-4) and purchase details available when contacting support.

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